

**To:** sauer@TechLawInc.com[sauer@TechLawInc.com]  
**Cc:** Wall, Dan[wall.dan@epa.gov]  
**From:** Scott Roberts  
**Sent:** Thur 9/17/2015 7:11:59 PM  
**Subject:** Re: Two Questions regarding Methods

Hi Steve,

Thanks for addressing my questions. Let me see if I can clarify my question regarding the 300 count subsample method. I know the MMI approach adopted by CDPHE attempts to minimize the influence of differing sample sizes by using computer software and/or a statistical technique to randomly reduce (re-sample) the number of organisms that are considered for the MMI metric to a target of 300 organisms.

My question is which technique Timberline has used for reducing larger samples to a 300 organism count prior to calculating the MMI. As indicated in a letter from Timberline in the BERA report (Appendix 11 p. 499), did Timberline send you an excel file entitled "Animas 2014 grid data" that would explain their sub-sampling methodology?

Thank you Steve. I appreciate any insight you could share.

Scott Roberts

**From:** Wall, Dan  
**Sent:** Wednesday, September 16, 2015 4:54 PM  
**To:** McDaniel, Mark; Walker, Scott; Auer, Steven  
**Cc:** Goodrich, Donald  
**Subject:** FW: Two Questions regarding Methods

Can you all help me with these questions? There will be some bug samples coming at some point.

**From:** Scott Roberts [mailto:[scott@mountainstudies.org](mailto:scott@mountainstudies.org)]  
**Sent:** Wednesday, September 16, 2015 4:03 PM  
**To:** Wall, Dan  
**Subject:** Two Questions regarding Methods

Hi Dan,

Great to see you yesterday. In order to make sure we are consistent with methodologies used in 2014, I have a few questions:

1) Can your chemist share the sample specifications they will need for tissue analysis? (e.g., what is the minimum # of grams per sample).

2) I believe Timberline Aquatics conducted the IDs and Metric calculation for the 2014 data. They stated that they used a 300-count sub-sample to calculate Colorado's multi-metric index. I want to ensure that I use the same sub-sampling methodology so that our multi-metric index is comparable. Would it be possible to ask Timberline for their methodology?

You or Steve Auer may already have Timberline's methodology according to the BERA Report, in Appendix 11 on p. 499 (<http://www2.epa.gov/sites/production/files/2015-06/documents/upper-animas-draft-bera-appendices-april-2015.pdf>)

*"February 6, 2015 Mr. Steve Auer TechLaw 16194 W. 45th Drive Denver, CO 80403  
Dear Mr. Auer, Enclosed are the results from fourteen (14) benthic macroinvertebrate samples collected for the Animas River Biomonitoring Project during the fall of 2014. Data are reported as 300-count subsamples (based on protocols for MMI calculation provided by the Colorado Department of Public Health and Environment). Specific information on subsampling has been provided in the enclosed Excel file entitled "Animas 2014 grid data". MMI scores were calculated from benthic data for each site. The MMI results are provided at the end of this report. Please contact me if you have any questions. Sincerely, Timberline Aquatics, Inc. David E. Rees President Enc. /dr"*

THANKS DAN!

Scott

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